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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,465	05/23/2005	Hans Kragl	1106.00002	9418

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EXAMINER

MAY, ROBERT J

ART UNIT	PAPER NUMBER
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2875

DATE MAILED: 09/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/533,465

Applicant(s)

KRAGL, HANS

Examiner

Robert May

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8 and 9 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 5/23/05

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

There seems to be a contradiction between the Abstract and page 4 of the specification because the abstract states the reflector body is placed into the opening with the irradiation surface first and the Page 4 of the specification states the radiation surface is first.

On Page 8, bottom paragraph and Page 9, Figure 4a and 4b are referred to, but Figure 4a and 4b do not exist in the Drawings.

The specification does clearly describe where “the small irradiation surface” as recited by Claim 1 is located.

Figure 7 and reference numerals therein are not referenced in the Brief Description of Drawings Section or anywhere else in the specification.

Page 8 last paragraph has an error because when the specification is referring to Figure 4, it should be referring to Figure 6 because there is no flat disc shown by Figure 4 and there is no Figure 4a or 4b as mentioned in this section.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore,

“the irradiation surface” as recited by Claims 1, 7, and 9

“a paraboloidal intersecting line on a plane vertically intersecting the lateral surfaces and the LED chip” as required by Claim 5,

“an extension transversely to a paraboloidal extension that is much larger than respective dimensions of the other lateral surfaces of the reflector body” as required by Claim 6, must be shown or the feature canceled from the claim.

No new matter should be entered.

Claims 6 and 7 are each a plurality of figures and should be described accordingly and should not be linked

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 1 is objected to because on the first line "A light-diode arrangement" should be changed to –light emitting diode arrangement—because all subsequent claims refer to as such.

Claim 1 is objected to because on line 7 there are minor grammatical mistake.

Claim 1 is objected to because on line 13, "its" lacks antecedent basis.

Claim 1 is objected to because it is unclear whether the Claim is referring to two reflective surfaces of two objects (i.e. the reflective surface of the sub-mount and the reflective surface of the reflector body) and if so, it is suggested to distinguish between these two surfaces by using a distinguishing term such as first and second reflective surfaces.

Claim 9 is objected to because "the space" on line 2 lacks antecedent basis.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 is indefinite. The "at least two opposing lateral surfaces generate a paraboloidal intersecting line on a plane vertically intersecting the lateral surfaces and the LED chip" is incomprehensible when read in light of the specification.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

As best understood, Claim 1-2, 4, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kragl (WO 02/054129) in view of Nagatani (US Pat 5,799,126).

Kragl discloses in Figure 1A, a light emitting diode arrangement comprising a reflector comprising a sub-mount 3 which comprises a reflective surface 19 located in a beam path of a light emitting diode chip wherein the sub-mount comprises a blind hole into which the light emitting diode chip 2 is inserted and the reflector comprises a paraboloid reflective surface (Para 0060 lines 5+) disposed above the blind hole, wherein the focal point or focal line is at the center of light emitting diode chip, and a reflector body (optical waveguide 7) is formed of a solid transparent material (glass fiber Para 0032) and the reflector body 7 is aligned with the sub-mount 3 forming a continuation of the reflective surface 19 of the sub-mount as shown in Figure 1a. Kragl fails to disclose the reflective body 7 as having a small irradiation surface and a large radiation surface opposing the light emitting diode 2. Nagatani discloses in Figure 5B a

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light guide device comprising an reflective body 10 made from a solid transparent material (acrylic resin Col 7, lines 60-61) comprising a small irradiation surface 12 and a large radiation surface 14 wherein the small irradiation surfaces is inserted first into the blind hole of the sub-mount for directing light rays with high directivity and with high efficiency regardless of emitting characteristics of the light source lamps (Abstract). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the reflective body of Kragl with the reflective body of Nagatani for directing light rays with high directivity and with high efficiency regardless of emitting characteristics of the light source lamps.

Regarding Claim 2, Kragl discloses the reflective body 7 as being a rotationally-symmetric body having an axis in which the LED is arranged (optical fiber is rotationally symmetrical because it is cylindrically shaped).

Regarding Claim 4, Kragl discloses a ferrule securing the reflector body 7 to the sub-mount (Para 0032).

Regarding Claim 9, Kragl discloses that a transparent cured liquid plastic K fills the space between the small irradiation surface the light emitting diode chip (Para 0062).

As best understood, Claims 3 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kragl and Nagatani as applied to claim 1 above, and further in view of Hed (US Pat 5,727,108).

Regarding Claim 3, Kragl fails to disclose the reflective body as being paraboloidal. However, Hed discloses a parabolic reflector 70 (CPC) that is paraboloidal for efficiently concentrating the light without loss through the reflector body (Col 1, lines 10-12, 29-31). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the reflector body with the paraboloidal shaped reflector body of Hed for efficiently concentrating the light without loss through the reflector body.

Regarding Claim 5, as best understood, Kragl fails to disclose the reflector body as formed by four lateral surfaces adjoining one another wherein at least two opposing lateral surfaces generate a paraboloidal intersecting line on a plane vertically intersecting lateral surface so the lateral surfaces and the LED chip. Hed discloses in Figure 5, a reflector body (CPC 50) with four lateral surfaces where two opposing surfaces have a paraboloidal shape so that the reflector can be especially useful for rectilinear light sources (Col 8, lines 1-2). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the reflector body of Kragl with the reflector body of Figure 5 so that the reflector can be especially useful for rectilinear light sources.

Regarding Claim 6, Kragl fails to disclose a plurality of adjoining LED chips opposing the small irradiation surface of the reflective body and held in place by their sub-mounts. However, it would have been obvious on of ordinary skill to duplicate the LED chips and have a plurality of LED chips held onto the reflective body by means of the their sub-mounts in order to increase the amount of light emitted through the

reflective body and it has been held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced, see *In re Harza*, 274 F.2d 669, 124 USPQ 378.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kragl and Nagatani as applied to claims 1-2 above, and further in view of Clarke (US Pat 4,915,479). Kragl fails to disclose the reflector surfaces of the reflector body as being polished. However, Clarke discloses a light guide 6 with reflective surfaces that are polished so as to establish total internal reflection through the light guide (Col 4, lines 12-14). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the reflective surfaces of Kragl by polishing them as taught by Clarke to establish total internal reflection.

Allowable Subject Matter

Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or show an arrangement wherein the reflector body is a circular disc or sector of a disc that has a circular opening in a center in combination with the elements recited in Claims 1 and 4.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert May whose telephone number is (571) 272-5919. The examiner can normally be reached between 9 am– 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300 for all communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval PAIR system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RM

9/11/06


RENEE LUEBKE
PRIMARY EXAMINER